

D Clark

116C1 1633 #5
3/25/98

CRF Errors Corrected by the STIC System Branch

Serial Number: 08/934,284

CRF Processing Date: 3/25/98
Edited by: [Signature]
Verified by: [Signature] (STIC staff)

ENTERED

- ☒ Changed a file from non-ASCII to ASCII
- ☒ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted **ending** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☒ Other: Seq 26 - added opening parentheses in "INFO. FOR SEQ ID NO"
ending

D Clark

1633

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254

DATE: 03/25/98
TIME: 16:50:00

INPUT SET: S24406.raw

This Raw Listing contains the General
Information Section and those Sequences
containing ERRORS.

SEQUENCE LISTING

(1) General Information:

Does Not Comply
Corrected Diskette Needed

(i) APPLICANT: Thomas, Terry L.

(ii) TITLE OF INVENTION: PRODUCTION OF GAMMA LINOLENIC ACID BY A
DELTA 6-DESATURASE

(iii) NUMBER OF SEQUENCES: 27

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Scully, Scott, Murphy & Presser
(B) STREET: 400 Garden City Plaza
(C) CITY: Garden City
(D) STATE: New York
(E) COUNTRY: United States
(F) ZIP: 11530

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER:
(B) FILING DATE:
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Presser, Leopold
(B) REGISTRATION NUMBER: 19,827
(C) REFERENCE/DOCKET NUMBER: 8383ZYXWVU

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (516) 742-4343
(B) TELEFAX: (516) 742-4366
(C) TELEX: 230 901 SANS UR

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:01

INPUT SET: S24406.raw

ERRORED SEQUENCES FOLLOW:

46 (2) INFORMATION FOR SEQ ID NO:1:

47

48 (i) SEQUENCE CHARACTERISTICS:

49

--> 50 (A) LENGTH: 3588 base pairs

51 (B) TYPE: nucleic acid

52 (C) STRANDEDNESS: both

53 (D) TOPOLOGY: linear

54

55 (ii) MOLECULE TYPE: DNA (genomic)

56

57 (ix) FEATURE:

58

59 (A) NAME/KEY: CDS

60 (B) LOCATION: 2002..3081

61

62 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

63

64 GCTAGCCACC AGTGACGATG CCTTGAATTT GGCCATTCTG ACCCAGGCCC GTATTCTGAA

65 60

66

67 TCCCCGCATT CGCATTGTTA ATCGTTTGTT CAACCATGCC CTGGGTAAAC GTTTAGACAC

68 120

69

70 CACCTTGCCA GACCACGTTA GTTTGAGTGT TTCCGCCCTG GCGGCCCGA TTTTTTCCTT

71 180

72

73 TCGCGCTTTG GGCAATCAGG CGATCGGGCA ATTGCGTTTG TTTGACCAGA CTTGGCCCAT

74 240

75

76 TCAGGAAATT GTCATTCACC AAGACCATCC CTGGCTCAAT TTACCCCTGG CGGATTTATG

77 300

78

79 GGATGATCCG AGCCGAATGT TGATCTATTA CCTACCGGCC CACAGTGAAA CGGATTTAGT

80 360

81

82 AGGCGCAGTG GTGAATAATT TAACGTTGCA ATCTGGGGAC CATTTAATAG TGGGACAAAA

83 420

84

85 ACCCCAACCC AAGACCAAAC GGCGATCGCC TTGGCGCAA TTTTCCAAAC TGATTACCAA

86 480

87

88 CCTGCGGGAG TATCAGCGGT ATGTCCAACA GGTGATATGG GTGGTGTGT TTTTATTGTT

89 540

90

91 GATGATTTTT CTGGCCACCT TCATCTACGT TTCCATTGAT CAACATATTG CCCCAGTGGA

92 600

*format error**60**↓**etc.*

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:03

INPUT SET: S24406.raw

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94 CGCGTTGTAT TTTTCCGTGG GCATGATTAC CGGGGCCGGT GGCAAGGAAG AGGTGGCCGA
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97 AAAGTCCCC GATATCATCA AAGTATTCAC AGTGGTGATG ATGATCGCCG GGGCGGGGGT
98 720
99
100 GATTGGTATT TGTTATGCCC TACTGAATGA TTTCATCCTT GGCAGTCGCT TTAGTCAGTT
101 780
102
103 TTTGGATGCG GCCAAGTTAC CCGATCGCCA TCACATCATC ATTTGTGGGC TGGGGGGAGT
104 840
105
106 GAGCATGGCC ATTATTGAAG AGTTAATTCA CCAGGGCCAT GAAATTGTGG TAATCGAAAA
107 900
108
109 GGATACAGAT AATCGTTTCT TGCATACGGC CCGCTCCCTG GGGGTGCCCC TAATTGTGGA
110 960
111
112 GGATGCCCCG CTAGAAAGAA CGTTGGCCTG CGCCAATATC AACCGAGCCG AAGCCATTGT
113 1020
114
115 GGTGGCCACC AGCGACGACA CCGTTAACTT GGAAATTGGC CTAAC TGCCA AGGCGATCGC
116 1080
117
118 CCCTAGCCTG CCAGTGGTGT TGC GTTGCCA GGATGCCCAG TTTAGCCTGT CCCTGCAGGA
119 1140
120
121 AGTATTTGAA TTTGAAACGG TGCTTTGTCC GGC GGAATTG GCCACCTATT CCTTTGCGGC
122 1200
123
124 GCGGCCCCTG GGGGGCAAAA TTTTGGGCAA CGGCATGACC GATGATTTGC TGTGGGTAGC
125 1260
126
127 CCTAGCCACC TTAATCACTC CTAACCATCC CTTTGCCGAC CAATTGGTTA AAATTGCAGC
128 1320
129
130 CCAAAAGTCT GATTTTCGTT CCCTCTATCT AGAACGGGGT GGCAAAACCA TCCATAGCTG
131 1380
132
133 GGAATTATTG GGTACCCATC TCGACTCTGG AGACGTGTTG TATTTAACCA TGCCCGCCAC
134 1440
135
136 TGCCCTAGAG CAACTTTGGC GATCGCCCCG TGCCACTGCT GATCCTCTGG ACTCTTTTTT
137 1500
138
139 GGTTTAGCAT GGGGGGATGG AACTCTTGAC TCGGCCCAAT GGTGATCAAG AAAGAACGCT
140 1560
141
142 TTGTCTATGT TTAGTATTTT TAAGTTAACC AACAGCAGAG GATAACTTCC AAAAGAAATT
143 1620
144
145 AAGCTCAAAA AGTAGCAAAA TAAGTTTAAT TCATAACTGA GTTTTACTGC TAAACAGCGG

same

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

DATE: 03/25/98
TIME: 16:50:04

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150
151 CAGGCATCTG CTCTAGGGAG TTTTCCGCT GCCTTTAGAG AGTATTTTCT CCAAGTCGGC
152 1800
153
154 TAACTCCCC ATTTTtaggc AAAATCATAT ACAGACTATC CCAATATTGC CAGAGCTTTG
155 1860
156
157 ATGACTCACT GTAGAAGGCA GACTAAAATT CTAGCAATGG ACTCCCAGTT GGAATAAATT
158 1920
159
160 TTTAGTCTCC CCCGGCGCTG GAGTTTTTTT GTAGTTAATG GCGGTATAAT GTGAAAGTTT
161 1980
162
163 TTTATCTATT TAAATTTATA A ATG CTA ACA GCG GAA AGA ATT AAA TTT ACC
164 2031
165 Met Leu Thr Ala Glu Arg Ile Lys Phe Thr
166 1 5 10
167
168 CAG AAA CGG GGG TTT CGT CGG GTA CTA AAC CAA CGG GTG GAT GCC TAC
169 2079
170 Gln Lys Arg Gly Phe Arg Arg Val Leu Asn Gln Arg Val Asp Ala Tyr
171 15 20 25
172
173 TTT GCC GAG CAT GGC CTG ACC CAA AGG GAT AAT CCC TCC ATG TAT CTG
174 2127
175 Phe Ala Glu His Gly Leu Thr Gln Arg Asp Asn Pro Ser Met Tyr Leu
176 30 35 40
177
178 AAA ACC CTG ATT ATT GTG CTC TGG TTG TTT TCC GCT TGG GCC TTT GTG
179 2175
180 Lys Thr Leu Ile Ile Val Leu Trp Leu Phe Ser Ala Trp Ala Phe Val
181 45 50 55
182
183 CTT TTT GCT CCA GTT ATT TTT CCG GTG CGC CTA CTG GGT TGT ATG GTT
184 2223
185 Leu Phe Ala Pro Val Ile Phe Pro Val Arg Leu Leu Gly Cys Met Val
186 60 65 70
187
188 TTG GCG ATC GCC TTG GCG GCC TTT TCC TTC AAT GTC GGC CAC GAT GCC
189 2271
190 Leu Ala Ile Ala Leu Ala Ala Phe Ser Phe Asn Val Gly His Asp Ala
191 75 80 85 90
192
193 AAC CAC AAT GCC TAT TCC TCC AAT CCC CAC ATC AAC CGG GTT CTG GGC
194 2319
195 Asn His Asn Ala Tyr Ser Ser Asn Pro His Ile Asn Arg Val Leu Gly
196 95 100 105
197
198 ATG ACC TAC GAT TTT GTC GGG TTA TCT AGT TTT CTT TGG CGC TAT CGC

same

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

 DATE: 03/25/98
 TIME: 16:50:06

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 200 Met Thr Tyr Asp Phe Val Gly Leu Ser Ser Phe Leu Trp Arg Tyr Arg
 201 110 115 120
 202
 203 CAC AAC TAT TTG CAC CAC ACC TAC ACC AAT ATT CTT GGC CAT GAC GTG
 204 2415
 205 His Asn Tyr Leu His His Thr Tyr Thr Asn Ile Leu Gly His Asp Val
 206 125 130 135
 207
 208 GAA ATC CAT GGA GAT GGC GCA GTA CGT ATG AGT CCT GAA CAA GAA CAT
 209 2463
 210 Glu Ile His Gly Asp Gly Ala Val Arg Met Ser Pro Glu Gln Glu His
 211 140 145 150
 212
 213 GTT GGT ATT TAT CGT TTC CAG CAA TTT TAT ATT TGG GGT TTA TAT CTT
 214 2511
 215 Val Gly Ile Tyr Arg Phe Gln Gln Phe Tyr Ile Trp Gly Leu Tyr Leu
 216 155 160 165 170
 217
 218 TTC ATT CCC TTT TAT TGG TTT CTC TAC GAT GTC TAC CTA GTG CTT AAT
 219 2559
 220 Phe Ile Pro Phe Tyr Trp Phe Leu Tyr Asp Val Tyr Leu Val Leu Asn
 221 175 180 185
 222
 223 AAA GGC AAA TAT CAC GAC CAT AAA ATT CCT CCT TTC CAG CCC CTA GAA
 224 2607
 225 Lys Gly Lys Tyr His Asp His Lys Ile Pro Pro Phe Gln Pro Leu Glu
 226 190 195 200
 227
 228 TTA GCT AGT TTG CTA GGG ATT AAG CTA TTA TGG CTC GGC TAC GTT TTC
 229 2655
 230 Leu Ala Ser Leu Leu Gly Ile Lys Leu Leu Trp Leu Gly Tyr Val Phe
 231 205 210 215
 232
 233 GGC TTA CCT CTG GCT CTG GGC TTT TCC ATT CCT GAA GTA TTA ATT GGT
 234 2703
 235 Gly Leu Pro Leu Ala Leu Gly Phe Ser Ile Pro Glu Val Leu Ile Gly
 236 220 225 230
 237
 238 GCT TCG GTA ACC TAT ATG ACC TAT GGC ATC GTG GTT TGC ACC ATC TTT
 239 2751
 240 Ala Ser Val Thr Tyr Met Thr Tyr Gly Ile Val Val Cys Thr Ile Phe
 241 235 240 245 250
 242
 243 ATG CTG GCC CAT GTG TTG GAA TCA ACT GAA TTT CTC ACC CCC GAT GGT
 244 2799
 245 Met Leu Ala His Val Leu Glu Ser Thr Glu Phe Leu Thr Pro Asp Gly
 246 255 260 265
 247
 248 GAA TCC GGT GCC ATT GAT GAC GAG TGG GCT ATT TGC CAA ATT CGT ACC
 249 2847
 250 Glu Ser Gly Ala Ile Asp Asp Glu Trp Ala Ile Cys Gln Ile Arg Thr
 251 270 275 280

Done

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:08

INPUT SET: S24406.raw

252
253 ACG GCC AAT TTT GCC ACC AAT AAT CCC TTT TGG AAC TGG TTT TGT GGC
254 2895
255 Thr Ala Asn Phe Ala Thr Asn Asn Pro Phe Trp Asn Trp Phe Cys Gly
256 285 290 295
257
258 GGT TTA AAT CAC CAA GTT ACC CAC CAT CTT TTC CCC AAT ATT TGT CAT
259 2943
260 Gly Leu Asn His Gln Val Thr His His Leu Phe Pro Asn Ile Cys His
261 300 305 310
262
263 ATT CAC TAT CCC CAA TTG GAA AAT ATT ATT AAG GAT GTT TGC CAA GAG
264 2991
265 Ile His Tyr Pro Gln Leu Glu Asn Ile Ile Lys Asp Val Cys Gln Glu
266 315 320 325 330
267
268 TTT GGT GTG GAA TAT AAA GTT TAT CCC ACC TTC AAA GCG GCG ATC GCC
269 3039
270 Phe Gly Val Glu Tyr Lys Val Tyr Pro Thr Phe Lys Ala Ala Ile Ala
271 335 340 345
272
273 TCT AAC TAT CGC TGG CTA GAG GCC ATG GGC AAA GCA TCG TGACATTGCC
274 3088
275 Ser Asn Tyr Arg Trp Leu Glu Ala Met Gly Lys Ala Ser
276 350 355 360
277
278 TTGGGATTGA AGCAAAATGG CAAAATCCCT CGTAAATCTA TGATCGAAGC CTTTCTGTTG
279 3148
280
281 CCCGCCGACC AAATCCCCGA TGCTGACCAA AGGTTGATGT TGGCATTGCT CCAAACCCAC
282 3208
283
284 TTTGAGGGGG TTCATTGGCC GCAGTTTCAA GCTGACCTAG GAGGCAAAGA TTGGGTGATT
285 3268
286
287 TTGCTCAAAT CCGCTGGGAT ATTGAAAAGGC TTCACCACCT TTGGTTTCTA CCCTGCTCAA
288 3328
289
290 TGGGAAGGAC AAACCGTCAG AATTGTTTAT TCTGGTGACA CCATCACCAG CCCATCCATG
291 3388
292
293 TGGTCTAACC CAGCCCTGGC CAAGGCTTGG ACCAAGGCCA TGCAAATTCT CCACGAGGCT
294 3448
295
296 AGGCCAGAAA AATTATATTG GCTCCTGATT TCTTCCGGCT ATCGCACCTA CCGATTTTTG
297 3508
298
299 AGCATTTTTG CCAAGGAATT CTATCCCCAC TATCTCCATC CCACTCCCCC GCCTGTACAA
300 3568
301
302 AATTTTATCC ATCAGCTAGC
303 3588
304

Done

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:09

INPUT SET: S24406.raw

305

388 (2) INFORMATION FOR SEQ ID NO:3:

389

390 (i) SEQUENCE CHARACTERISTICS:

391

--> 392 (A) LENGTH: 1884 base pairs

393 (B) TYPE: nucleic acid

394 (C) STRANDEDNESS: both

395 (D) TOPOLOGY: linear

396

397 (ii) MOLECULE TYPE: DNA (genomic)

398

399 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

400

401 AGCTTCACTT CGGTTTTATA TTGTGACCAT GGTTCACAGG CATCTGCTCT AGGGAGTTTT

402 60

403

404 TCCGCTGCCT TTAGAGAGTA TTTTCTCCAA GTCGGCTAAC TCCCCCATTT TTAGGCAAAA

405 120

406

407 TCATATACAG ACTATCCCAA TATTGCCAGA GCTTTGATGA CTCACTGTAG AAGGCAGACT

408 180

409

410 AAAATTCTAG CAATGGACTC CCAGTTGGAA TAAATTTTTTA GTCTCCCCCG GCGCTGGAGT

411 240

412

413 TTTTTTGTAG TTAATGGCGG TATAATGTGA AAGTTTTTTTA TCTATTTAAA TTTATAAATG

414 300

415

416 CTAACACGGG AAAGAATTAA ATTTACCCAG AAACGGGGGT TTCGTCGGGT ACTAAACCAA

417 360

418

419 CGGGTGGATG CCTACTTTGC CGAGCATGGC CTGACCCAAA GGGATAATCC CTCCATGTAT

420 420

421

422 CTGAAAACCC TGATTATTGT GCTCTGGTTG TTTTCCGCTT GGGCCTTTGT GCTTTTTTGCT

423 480

424

425 CCAGTTATTT TTCCGGTGCG CCTACTGGGT TGATATGGTTT TGGCGATCGC CTTGGCGGCC

426 540

427

428 TTTTCCTTCA ATGTCGGCCA CGATGCCAAC CACAATGCCT ATTCCTCCAA TCCCCACATC

429 600

430

431 AACCGGGTTC TGGGCATGAC CTACGATTTT GTCGGGTTAT CTAGTTTTCT TTGGCGCTAT

432 660

433

434 CGCCACAACCT ATTTGCACCA CACCTACACC AATATTCCTG GCCATGACGT GGAAATCCAT

435 720

436

437 GGAGATGGCG CAGTACGTAT GAGTCCTGAA CAAGAACATG TTGGTATTTA TCGTTTCCAG

438 780

same

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:11

INPUT SET: S24406.raw

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440 CAATTTTATA TTTGGGGTTT ATATCTTTTC ATTCCCTTTT ATTGGTTTCT CTACGATGTC
441 840
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443 TACCTAGTGC TTAATAAAGG CAAATATCAC GACCATAAAA TTCCTCCTTT CCAGCCCCTA
444 900
445
446 GAATTAGCTA GTTTGCTAGG GATTAAGCTA TTATGGCTCG GCTACGTTTT CGGCTTACCT
447 960
448
449 CTGGCTCTGG GCTTTTCCAT TCCTGAAGTA TTAATTGGTG CTTCGGTAAC CTATATGACC
450 1020
451
452 TATGGCATCG TGGTTTGCAC CATCTTTATG CTGGCCCATG TGTTGGAATC AACTGAATTT
453 1080
454
455 CTCACCCCCG ATGGTGAATC CGGTGCCATT GATGACGAGT GGGCTATTTG CCAAATTCGT
456 1140
457
458 ACCACGGCCA ATTTTGCCAC CAATAATCCC TTTTGGAACT GGTTTTGTGG CGGTTTAAAT
459 1200
460
461 CACCAAGTTA CCCACCATCT TTTCCCCAAT ATTTGTCATA TTCACTATCC CCAATTGGAA
462 1260
463
464 AATATTATTA AGGATGTTTG CCAAGAGTTT GGTGTGGAAT ATAAAGTTTA TCCCACCTTC
465 1320
466
467 AAAGCGGCGA TCGCCTCTAA CTATCGCTGG CTAGAGGCCA TGGGCAAAGC ATCGTGACAT
468 1380
469
470 TGCCTTGGA TGAAGCAAA ATGGCAAAAT CCCTCGTAAA TCTATGATCG AAGCCTTTCT
471 1440
472
473 GTTGCCCGCC GACCAAATCC CCGATGCTGA CCAAAGGTTG ATGTTGGCAT TGCTCCAAAC
474 1500
475
476 CCACTTTGAG GGGGTTCATT GGCCGCAGTT TCAAGCTGAC CTAGGAGGCA AAGATTGGGT
477 1560
478
479 GATTTTGCTC AAATCCGCTG GGATATTGAA AGGCTTCACC ACCTTTGGTT TCTACCCTGC
480 1620
481
482 TCAATGGGAA GGACAAACCG TCAGAATTGT TTATTCTGGT GACACCATCA CCGACCCATC
483 1680
484
485 CATGTGGTCT AACCAGCCC TGGCCAAGGC TTGGACCAAG GCCATGCAAA TTCTCCACGA
486 1740
487
488 GGCTAGGCCA GAAAAATTAT ATTGGCTCCT GATTTCTTCC GGCTATCGCA CCTACCGATT
489 1800
490
491 TTTGAGCATT TTTGCCAAGG AATTCTATCC CCACTATCTC CATCCCACTC CCCC GCCTGT

same

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:12

INPUT SET: S24406.raw

492 1860
493
494 AAAAAATTTT ATCCATCAGC TAGC
495 1884
496
497

498 (2) INFORMATION FOR SEQ ID NO:4:
499

500 (i) SEQUENCE CHARACTERISTICS:
501

--> 502 (A) LENGTH: 1685 base pairs
503 (B) TYPE: nucleic acid
504 (C) STRANDEDNESS: both
505 (D) TOPOLOGY: linear
506

507 (ii) MOLECULE TYPE: DNA (genomic)
508

509 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:
510

511 AATATCTGCC TACCCTCCCA AAGAGAGTAG TCATTTTTC TCAATGGCTG CTCAAATCAA
512 60

513
514 GAAATACATT ACCTCAGATG AACTCAAGAA CCACGATAAA CCCGGAGATC TATGGATCTC
515 120

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517 GATTCAAGGG AAAGCCTATG ATGTTTCGGA TTGGGTGAAA GACCATCCAG GTGGCAGCTT
518 180

519
520 TCCCTTGAAG AGTCTTGCTG GTCAAGAGGT AACTGATGCA TTTGTTGCAT TCCATCCTGC
521 240

522
523 CTCTACATGG AAGAATCTTG ATAAGTTTTT CACTGGGTAT TATCTTAAAG ATTACTCTGT
524 300

525
526 TTCTGAGGTT TCTAAAGATT ATAGGAAGCT TGTGTTTGAG TTTTCTAAAA TGGGTTTGTA
527 360

528
529 TGACAAAAAA GGTCATATTA TGTTTGCAAC TTTGTGCTTT ATAGCAATGC TGTTTGCTAT
530 420

531
532 GAGTGTATAT GGGGTTTGT TTTGTGAGGG TGTTTGGTA CATTTGTTTT CTGGGTGTTT
533 480

534
535 GATGGGGTTT CTTTGGATTC AGAGTGGTTG GATTGGACAT GATGCTGGGC ATTATATGGT
536 540

537
538 AGTGTCTGAT TCAAGGCTTA ATAAGTTTAT GGGTATTTTT GCTGCAAATT GTCTTTCAGG
539 600

540
541 AATAAGTATT GGTTGGTGA AATGGAACCA TAATGCACAT CACATTGCCT GTAATAGCCT
542 660
543

same

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:14

INPUT SET: S24406.raw

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547 TTCACTCACC TCTCATTTCT ATGAGAAAAG GTTGACTTTT GACTCTTTAT CAAGATTCTT
548 780
549
550 TGTAAGTTAT CAACATTGGA CATTTTACCC TATTATGTGT GCTGCTAGGC TCAATATGTA
551 840
552
553 TGTACAATCT CTCATAATGT TGTTGACCAA GAGAAATGTG TCCTATCGAG CTCAGGAACT
554 900
555
556 CTTGGGATGC CTAGTGTTCT CGATTTGGTA CCCGTTGCTT GTTCTTGTT TGCCTAATTG
557 960
558
559 GGGTGAAAAGA ATTATGTTTG TTATTGCAAG TTTATCAGTG ACTGGAATGC AACAAGTTCA
560 1020
561
562 GTTCTCCTTG AACCACTTCT CTTCAAGTGT TTATGTTGGA AAGCCTAAAG GGAATAATTG
563 1080
564
565 GTTTGAGAAA CAAACGGATG GGACACTTGA CATTTCTTGT CCTCCTTGGA TGGATTGGTT
566 1140
567
568 TCATGGTGGA TTGCAATTCC AAATTGAGCA TCATTTGTTT CCCAAGATGC CTAGATGCAA
569 1200
570
571 CCTTAGGAAA ATCTCGCCCT ACGTGATCGA GTTATGCAAG AAACATAATT TGCCTTACAA
572 1260
573
574 TTATGCATCT TTCTCCAAGG CCAATGAAAT GACACTCAGA ACATTGAGGA ACACAGCATT
575 1320
576
577 GCAGGCTAGG GATATAACCA AGCCGCTCCC GAAGAATTTG GTATGGGAAG CTCTTCACAC
578 1380
579
580 TCATGGTTAA AATTACCCTT AGTTCATGTA ATAATTTGAG ATTATGTATC TCCTATGTTT
581 1440
582
583 GTGTCTTGTC TTGGTTCTAC TTGTTGGAGT CATTGCAACT TGTCTTTTAT GGTTTATTAG
584 1500
585
586 ATGTTTTTTA ATATATTTTA GAGGTTTTGC TTTCATCTCC ATTATTGATG AATAAGGAGT
587 1560
588
589 TGCATATTGT CAATTGTTGT GCTCAATATC TGATATTTTG GAATGTACTT TGTACCACTG
590 1620
591
592 TGTTTTTCAGT TGAAGCTCAT GTGTACTTCT ATAGACTTTG TTTAAATGGT TATGTCATGT
593 1680
594
595 TATTT
596 1685

same

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:15

INPUT SET: S24406.raw

597
598

1037 (2) INFORMATION FOR SEQ ID NO:25:
1038
1039 (i) SEQUENCE CHARACTERISTICS:
1040
1041 (A) LENGTH: 5 amino acids
1042 (B) TYPE: amino acid
1043 (D) TOPOLOGY: linear
1044
1045 (ii) MOLECULE TYPE: Peptide
1046
1047 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:
1048 His Val Pro His His
1049 1 5
1050
1051
1052

--> 1053 (2) INFORMATION FOR SEQ ID NO:26:
1054
1055 (i) SEQUENCE CHARACTERISTICS:
--> 1056 (A) LENGTH: 1702 base pairs
1057 (B) TYPE: nucleic acid
1058 (C) STRANDEDNESS: both
1059 (D) TOPOLOGY: linear
1060
1061 (ii) MOLECULE TYPE: DNA (genomic)
1062
1063 (ix) FEATURE:
1064 (A) NAME/KEY: CDS
1065 (B) LOCATION: 48..1406
1066
1067 (ix) FEATURE:
1068 (A) NAME/KEY: CDS
1069 (B) LOCATION: 48..1406
1070
--> 1071 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
1072
1073 CCCCCAAAAT TTTCATTGTT CTCCATCTGG ACCACAGCAT CCACACA ATG GAG GGC
1074 56
1075 Met Glu Gly
1076 1
1077
1078 GAA GCT AAG AAG TAT ATC ACG GCG GAG GAC CTC CGC CGC CAC AAC AAG
1079 104
1080 Glu Ala Lys Lys Tyr Ile Thr Ala Glu Asp Leu Arg Arg His Asn Lys
1081 5 10 15
1082
1083 TCC GGC GAT CTC TGG ATC TCC ATC CAG GGC AAG GTC TAC GAC TGC TCT
1084 152
1085 Ser Gly Asp Leu Trp Ile Ser Ile Gln Gly Lys Val Tyr Asp Cys Ser
1086 20 25 30 35

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

DATE: 03/25/98
TIME: 16:50:17

INPUT SET: S24406.raw

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1087
1088   CGG TGG GCG GCG GAG CAC CCC GGC GGC GAG GTC CCG CTC CTC AGT CTG
1089       200
1090   Arg Trp Ala Ala Glu His Pro Gly Gly Glu Val Pro Leu Leu Ser Leu
1091           40                     45                     50
1092
1093   GCC GGC CAG GAC GTC ACC GAC GCC TTC ATT GCG TAC CAC CCG GGC ACG
1094       248
1095   Ala Gly Gln Asp Val Thr Asp Ala Phe Ile Ala Tyr His Pro Gly Thr
1096           55                     60                     65
1097
1098   GCG TGG CCG CAT CTG GAT CCG CTC TTC ACC GGC TAC TAC TAC CTC AAG
1099       296
1100   Ala Trp Arg His Leu Asp Pro Leu Phe Thr Gly Tyr Tyr Tyr Leu Lys
1101           70                     75                     80
1102
1103   GAC TTC GAA GTG TCG GAG ATC TCC AAG GAC TAC CCG AGG CTT TTG AAC
1104       344
1105   Asp Phe Glu Val Ser Glu Ile Ser Lys Asp Tyr Arg Arg Leu Leu Asn
1106           85                     90                     95
1107
1108   GAG ATG TCG CCG TCC GGG ATC TTC GAG AAG AAG GGC CAC CAC ATC ATG
1109       392
1110   Glu Met Ser Arg Ser Gly Ile Phe Glu Lys Lys Gly His His Ile Met
1111       100                     105                     110                     115
1112
1113   TGG ACG TTC GTC GGC GTT GCG GTC ATG ATG GCG GCA ATC GTC TAC GGC
1114       440
1115   Trp Thr Phe Val Gly Val Ala Val Met Met Ala Ala Ile Val Tyr Gly
1116           120                     125                     130
1117
1118   GTG CTG GCG TCG GAG TCC GTC GGA GTT CAC ATG CTC TGC GGC GCA CTG
1119       488
1120   Val Leu Ala Ser Glu Ser Val Gly Val His Met Leu Cys Gly Ala Leu
1121           135                     140                     145
1122
1123   CTG GGC TTG CTG TGG ATC CAA GCC GCG TAT GTG GGC CAT GAC TCC GGC
1124       536
1125   Leu Gly Leu Leu Trp Ile Gln Ala Ala Tyr Val Gly His Asp Ser Gly
1126           150                     155                     160
1127
1128   CAT TAC CAG GTG ATG CCA ACC CGT GGA TAC AAC AGA ATC ACG CAA CTC
1129       584
1130   His Tyr Gln Val Met Pro Thr Arg Gly Tyr Asn Arg Ile Thr Gln Leu
1131           165                     170                     175
1132
1133   ATA GCA GGC AAC ATC CTA ACC GGA ATC AGC ATC GCG TGG TGG AAG TGG
1134       632
1135   Ile Ala Gly Asn Ile Leu Thr Gly Ile Ser Ile Ala Trp Trp Lys Trp
1136       180                     185                     190                     195
1137
1138   ACC CAC AAC GCC CAC CAC CTC GCC TGC AAC AGC CTC GAC TAC GAC CCC
1139       680

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same

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

 DATE: 03/25/98
 TIME: 16:50:18

INPUT SET: S24406.raw

1140 Thr His Asn Ala His His Leu Ala Cys Asn Ser Leu Asp Tyr Asp Pro
 1141 200 205 210
 1142
 1143 GAC CTC CAG CAC ATC CCC GTA TTC GCC GTC TCC ACC CGA CTC TTC AAC
 1144 728
 1145 Asp Leu Gln His Ile Pro Val Phe Ala Val Ser Thr Arg Leu Phe Asn
 1146 215 220 225
 1147
 1148 TCC ATC ACC TCG GTC TTC TAT GGC CGA GTC CTG AAA TTC GAC GAA GTG
 1149 776
 1150 Ser Ile Thr Ser Val Phe Tyr Gly Arg Val Leu Lys Phe Asp Glu Val
 1151 230 235 240
 1152
 1153 GCA CGG TTC CTA GTC AGC TAC CAG CAC TGG ACC TAC TAC CCG GTC ATG
 1154 824
 1155 Ala Arg Phe Leu Val Ser Tyr Gln His Trp Thr Tyr Tyr Pro Val Met
 1156 245 250 255
 1157
 1158 ATC TTC GGC CGA GTC AAC CTC TTC ATC CAG ACC TTT TTA TTG CTC CTC
 1159 872
 1160 Ile Phe Gly Arg Val Asn Leu Phe Ile Gln Thr Phe Leu Leu Leu Leu
 1161 260 265 270 275
 1162
 1163 ACC AGG CGC GAC GTC CCT GAC CGC GCT CTA AAC TTA ATG GGT ATC GCG
 1164 920
 1165 Thr Arg Arg Asp Val Pro Asp Arg Ala Leu Asn Leu Met Gly Ile Ala
 1166 280 285 290
 1167
 1168 GTT TTC TGG ACG TGG TTC CCG CTC TTC GTA TCT TGT CTC CCG AAC TGG
 1169 968
 1170 Val Phe Trp Thr Trp Phe Pro Leu Phe Val Ser Cys Leu Pro Asn Trp
 1171 295 300 305
 1172
 1173 CCT GAA CGG TTC GGG TTC GTC CTC ATC AGC TTT GCG GTC ACG GCG ATC
 1174 1016
 1175 Pro Glu Arg Phe Gly Phe Val Leu Ile Ser Phe Ala Val Thr Ala Ile
 1176 310 315 320
 1177
 1178 CAG CAC GTC CAG TTC ACG CTC AAC CAC TTC TCC GGC GAC ACA TAC GTG
 1179 1064
 1180 Gln His Val Gln Phe Thr Leu Asn His Phe Ser Gly Asp Thr Tyr Val
 1181 325 330 335
 1182
 1183 GGC CCC CCC AAG GGC GAC AAC TGG TTC GAG AAG CAG ACG AAA GGG ACG
 1184 1112
 1185 Gly Pro Pro Lys Gly Asp Asn Trp Phe Glu Lys Gln Thr Lys Gly Thr
 1186 340 345 350 355
 1187
 1188 ATC GAT ATC ACG TGC CCA CCG TGG ATG GAC TGG TTC TTT GGT GGG CTG
 1189 1160
 1190 Ile Asp Ile Thr Cys Pro Pro Trp Met Asp Trp Phe Phe Gly Gly Leu
 1191 360 365 370
 1192

same

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

 DATE: 03/25/98
 TIME: 16:50:20

INPUT SET: S24406.raw

1193 CAG TTC CAG TTG GAG CAC CAC TTG TTC CCT AGG CTG CCG CGT GGG CAG
 1194 1208
 1195 Gln Phe Gln Leu Glu His His Leu Phe Pro Arg Leu Pro Arg Gly Gln
 1196 375 380 385
 1197
 1198 CTT AGG AAG ATT GCG CCC TTG GCT CGG GAC TTG TGT AAG AAG CAC GGG
 1199 1256
 1200 Leu Arg Lys Ile Ala Pro Leu Ala Arg Asp Leu Cys Lys Lys His Gly
 1201 390 395 400
 1202
 1203 ATG CCG TAT AGG AGC TTC GGG TTT TGG GAC GAC GCT AAT GTC AGG ACA
 1204 1304
 1205 Met Pro Tyr Arg Ser Phe Gly Phe Trp Asp Asp Ala Asn Val Arg Thr
 1206 405 410 415
 1207
 1208 ATT CGG ACG CTG AGG GAT GCG GCG GTT CAG GCG CGT GAC CTT AAT TCG
 1209 1352
 1210 Ile Arg Thr Leu Arg Asp Ala Ala Val Gln Ala Arg Asp Leu Asn Ser
 1211 420 425 430 435
 1212
 1213 GCC CCG TGC CCT AAG AAA CTT GGG TAT GGG GAA GCT TAT AAC ACC CAT
 1214 1400
 1215 Ala Pro Cys Pro Lys Lys Leu Gly Tyr Gly Glu Ala Tyr Asn Thr His
 1216 440 445 450
 1217
 1218 GGT TGA TTGTGGTTTT GTGTTGTGGG TTGGAGGATC TTCTTATTAT TGATTTATGT
 1219 1456
 1220 Gly *
 1221
 1222
 1223 CCACAATATT GAACTGAATA ACCATGGAAG GCACTACGTT CAGCTTAACT TTGCTTAACT
 1224 1516
 1225
 1226 TTGCTAGCTG GTTGCGTTCC CTTGTTGGGG GCAAAGTGCA GTATTTATTT TCTTATCCCA
 1227 1576
 1228
 1229 TGTACTTTTT GATTATTGTT CTTATTCGTA TCATAAATAA TTTATTATTG ATTAATTTTT
 1230 1636
 1231
 1232 GTTGTAGTTG GGTGTCTATA GCAAGTTTAT AATACTGAGA TATATTTTTT TGGTAAAAAA
 1233 1696
 1234
 1235 AAAAAA
 1236 1702
 1237
 1238

--> 1239 (2) INFORMATION FOR SEQ ID NO:27:

1240

1241

(i) SEQUENCE CHARACTERISTICS:

1242

(A) LENGTH: 452 amino acids

1243

(B) TYPE: amino acid

1244

(D) TOPOLOGY: linear

OK

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

DATE: 03/25/98
TIME: 16:50:21

INPUT SET: S24406.raw

1245

1246

(ii) MOLECULE TYPE: protein

1247

1248

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

1249

1250 Met Glu Gly Glu Ala Lys Lys Tyr Ile Thr Ala Glu Asp Leu Arg Arg

1251 1 5 10 15

1252

1253 His Asn Lys Ser Gly Asp Leu Trp Ile Ser Ile Gln Gly Lys Val Tyr

1254 20 25 30

1255

1256 Asp Cys Ser Arg Trp Ala Ala Glu His Pro Gly Gly Glu Val Pro Leu

1257 35 40 45

1258

1259 Leu Ser Leu Ala Gly Gln Asp Val Thr Asp Ala Phe Ile Ala Tyr His

1260 50 55 60

1261

1262 Pro Gly Thr Ala Trp Arg His Leu Asp Pro Leu Phe Thr Gly Tyr Tyr

1263 65 70 75 80

1264

1265 Tyr Leu Lys Asp Phe Glu Val Ser Glu Ile Ser Lys Asp Tyr Arg Arg

1266 85 90 95

1267

1268 Leu Leu Asn Glu Met Ser Arg Ser Gly Ile Phe Glu Lys Lys Gly His

1269 100 105 110

1270

1271 His Ile Met Trp Thr Phe Val Gly Val Ala Val Met Met Ala Ala Ile

1272 115 120 125

1273

1274 Val Tyr Gly Val Leu Ala Ser Glu Ser Val Gly Val His Met Leu Cys

1275 130 135 140

1276

1277 Gly Ala Leu Leu Gly Leu Leu Trp Ile Gln Ala Ala Tyr Val Gly His

1278 145 150 155 160

1279

1280 Asp Ser Gly His Tyr Gln Val Met Pro Thr Arg Gly Tyr Asn Arg Ile

1281 165 170 175

1282

1283 Thr Gln Leu Ile Ala Gly Asn Ile Leu Thr Gly Ile Ser Ile Ala Trp

1284 180 185 190

1285

1286 Trp Lys Trp Thr His Asn Ala His His Leu Ala Cys Asn Ser Leu Asp

1287 195 200 205

1288

1289 Tyr Asp Pro Asp Leu Gln His Ile Pro Val Phe Ala Val Ser Thr Arg

1290 210 215 220

1291

1292 Leu Phe Asn Ser Ile Thr Ser Val Phe Tyr Gly Arg Val Leu Lys Phe

1293 225 230 235 240

1294

1295 Asp Glu Val Ala Arg Phe Leu Val Ser Tyr Gln His Trp Thr Tyr Tyr

1296 245 250 255

1297

RAW SEQUENCE LISTING PATENT APPLICATION US/08/934,254

 DATE: 03/25/98
 TIME: 16:50:23

INPUT SET: S24406.raw

1298	Pro Val Met Ile Phe Gly Arg Val Asn Leu Phe Ile Gln Thr Phe Leu
1299	260 265 270
1300	
1301	Leu Leu Leu Thr Arg Arg Asp Val Pro Asp Arg Ala Leu Asn Leu Met
1302	275 280 285
1303	
1304	Gly Ile Ala Val Phe Trp Thr Trp Phe Pro Leu Phe Val Ser Cys Leu
1305	290 295 300
1306	
1307	Pro Asn Trp Pro Glu Arg Phe Gly Phe Val Leu Ile Ser Phe Ala Val
1308	305 310 315 320
1309	
1310	Thr Ala Ile Gln His Val Gln Phe Thr Leu Asn His Phe Ser Gly Asp
1311	325 330 335
1312	
1313	Thr Tyr Val Gly Pro Pro Lys Gly Asp Asn Trp Phe Glu Lys Gln Thr
1314	340 345 350
1315	
1316	Lys Gly Thr Ile Asp Ile Thr Cys Pro Pro Trp Met Asp Trp Phe Phe
1317	355 360 365
1318	
1319	Gly Gly Leu Gln Phe Gln Leu Glu His His Leu Phe Pro Arg Leu Pro
1320	370 375 380
1321	
1322	Arg Gly Gln Leu Arg Lys Ile Ala Pro Leu Ala Arg Asp Leu Cys Lys
1323	385 390 395 400
1324	
1325	Lys His Gly Met Pro Tyr Arg Ser Phe Gly Phe Trp Asp Asp Ala Asn
1326	405 410 415
1327	
1328	Val Arg Thr Ile Arg Thr Leu Arg Asp Ala Ala Val Gln Ala Arg Asp
1329	420 425 430
1330	
1331	Leu Asn Ser Ala Pro Cys Pro Lys Lys Leu Gly Tyr Gly Glu Ala Tyr
1332	435 440 445
1333	
1334	Asn Thr His Gly
1335	450
1336	

SEQUENCE VERIFICATION REPORT
PATENT APPLICATION US/08/934,254DATE: 03/25/98
TIME: 16:50:25**INPUT SET: S24406.raw**

Line	Error	Original Text
11	Number of Sequences (27) Doesn't Equal Actual Count (26)	(iii) NUMBER OF SEQUENCES: 27
50	Entered (3588) and Calc. Seq. Length (0) differ	(A) LENGTH: 3588 base pairs
392	Entered (1884) and Calc. Seq. Length (0) differ	(A) LENGTH: 1884 base pairs
502	Entered (1685) and Calc. Seq. Length (0) differ	(A) LENGTH: 1685 base pairs
1053	Wrong Amino Acid Designator	2) INFORMATION FOR SEQ ID NO:26:
1053	Wrong Amino Acid Designator	2) INFORMATION FOR SEQ ID NO:26:
1053	Wrong Amino Acid Designator	2) INFORMATION FOR SEQ ID NO:26:
1053	Wrong Amino Acid Designator	2) INFORMATION FOR SEQ ID NO:26:
1053	Wrong Amino Acid Designator	2) INFORMATION FOR SEQ ID NO:26:
1056	Entered (1702) and Calc. Seq. Length (0) differ	(A) LENGTH: 1702 base pairs
1071	Wrong Sequence Number	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
1239	Sequence 26 missing	(2) INFORMATION FOR SEQ ID NO:27:
1334	Stop Codon at end of sequence removed - no error	